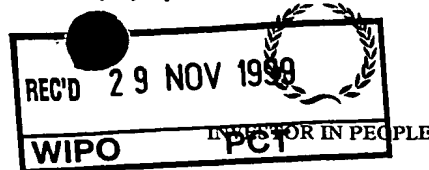




The
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South Wales
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I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

I also certify that the attached copy of the request for grant of a Patent (Form 1/77) bears an amendment, effected by this office, following a request by the applicant and agreed to by the Comptroller-General.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

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Signed

Andrew Gentry

Dated 19 November 1999

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Patents A 1977

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The Patent Office

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Request for Grant of a Patent

 The Patent Office
 Cardiff Road
 Newport
 Gwent NP9 1RH

1.	Your reference	DW/P83275 GB	
2.	Patent Application number (the Patent Office will fill in this part)	14 OCT 1998	9822436.3
3.	Full name, address and postcode of the or of each Applicant (underline all surnames)	Cambridge Combinatorial Ltd. The Merrifield Centre Rosemary Lane Cambridge CB1 3LQ	
	Patents ADP Number (if you know it)		
	If the applicant is a corporate body, give the country/state of its incorporation	England	
4.	Title of the Invention	SINTERED/CO-SINTERED MATERIALS	
5.	Name of your Agent (if you have one)	URQUHART DYKES & LORD	
	"Address for Service" in the United Kingdom to which all correspondence should be sent (including the postcode)	91 Wimpole Street London W1M 8AH Great Britain	Appleyard Lees 15 Clare Road HALIFAX West Yorkshire HX1 2HY
	Patents ADP Number (if you know it)	1644002	
6.	If you are declaring priority from one or more earlier Patent Applications, give the country and the date of filing of the or of each of these earlier Applications and (if you know it) the or each Application Number	Country	
7.	If this Application is divided or otherwise derived from an earlier UK Application, give the Number and the Filing Date of the earlier Application	Number of earlier application	Date of Filing (Day/month/year)
8.	Is a Statement of Inventorship and of Right to Grant of a Patent required in support of this request ? (Answer 'Yes' if:	Yes	

- a) any Applicant named in part 3 is not an inventor, or
 b) there is an inventor who is not named as an Applicant, or
 c) any named Applicant is a corporate body.)

9. Enter the number of sets for any of the following items you are filing with this Form. Do not count copies of the same document

Continuation sheet of this Form	0
Description	3
Claim(s)	0
Abstract	0
Drawing(s)	4 + 4 (2)

10. If you are also filing any of the following state how many against each item

Priority documents

Translations of priority documents

Statement of Inventorship and Right to Grant a Patent (*Patents Form 7/77*)

Request for Preliminary Examination (*Patents Form 9/77*)

Request for Substantive Examination (*Patents Form 10/77*)

Any other documents (*please specify*)

11.

I/We request the grant of a Patent on the basis of this Application

Urquhart - Dykes & Lord

Signature Date 14 October 1998

URQUHART-DYKES & LORD

12. Name and daytime telephone number of person to contact in the United Kingdom

D. Watkins - 0171 629 1771

Warning

After an Application for a Patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a Patent abroad without first getting written permission from the Patent Office unless an Application has been filed at least 6 weeks beforehand in the United Kingdom for a Patent for the same invention and either no direction prohibiting Publication or communication has been given, or any such direction has been revoked.

SINTERED/CO-SINTERED MATERIALS

The present invention relates to a method of preparing new materials suitable for use as substrates in solid phase chemistry, and materials obtained thereby.

The method of preparing the new materials involves the process of co-sintering a chemically active species bearing or containing accessible functionality with a variety of matrix-forming materials. The matrix-forming materials may additionally, in themselves, bear chemical functionality.

Method of Sintering

An intimate mixture of an organic or inorganic matrix forming material and a number of chemically active species, bearing or containing accessible functionality, is first formed into an appropriate physical shape. The new mixture is then sintered or co-sintered by subjecting it to a variable temperature for a variable residence time according to the melt-flow characteristics of the matrix forming material. A unique identifier can, if necessary be incorporated during formation, or applied post manufacture.

Support Materials

The materials which can be co-sintered within this invention include, without limitation: polystyrene based resin beads of the type included below, polypropylene based materials as resin beads and powders, chemically modified beads and powders, zeolites, Teflon beads or any inorganic and organic powder or bead which will allow chemical or physical attachment to their surface or to their interior of active chemical reagents or molecules.

A SELECTION OF SUPPORT MATERIALS SUITABLE FOR SINTERING

TYPE	Catalogue No.	Batch No.	Loading
Oxime resin	01-64-0022	A16856	0.57 mmole/g
Wang resin	01-64-0014	A20468	0.83 mmole/g
NovaSyn TG amino resin	01-64-0094	A17588	0.3 mmole/g
p-Nitrophenyl carbonate Wang resin	01-64-0123	A19640	0.54 mmole/g
Aminomethyl-NovaGel HL	01-64-0283	A21257	0.76 mmole/g
2-Chlorotriethylchloride resin	01-64-0114	A19570	1.14 mmole/g
3,5-Dimethoxy-4-formyl-phenoxyethoxy-methyl polystyrene	01-64-0261	A20373	0.96 mmole/g
Merrifield Resin LL	01-64-0008	A17566	0.96 mmole/g
Zeolites			
5A)			
4A) molecular sieves			
3A)			
2A)			
Montmorillite clay powder			
Amberlyst			

Co sintering matrix forming materials

This includes without limitation any organic or inorganic matrix forming material of appropriate melt-flow characteristics such as to permit formation via physical attachment or containment of support materials listed above.

This includes without limitation, polyethylene, polypropylene, per-halo-polyalkylenes and other chemically and physically suitable materials.

Uses

Materials of these types have never been prepared previously, and in various forms are suitable for chemistry:

1. In solid phase chemistry, where the support can be the matrix trapped resin beads included therein or the matrix material itself.
2. For use in solution phase chemistry where substrates in solution may be induced to react together by a reagent or number of reagents trapped in or chemically attached to a solid phase, itself trapped within the matrix. The matrix itself can be also have a reagent or number of reagents trapped or chemically attached to its surface.
3. For catalysing various chemical reactions by occluded reagents entrapped within, for example an inorganic zeolite matrix, itself entrapped within the sintered matrix, or the matrix itself could be the catalyst.

Physical form

The invention includes the possibility of sintering an existing polymeric material in powder or bead form, which itself has been chemically or physically modified, to allow attachment or entrapment of active chemical species on or within the surface of the powder or bead form into new physically constrained shapes. These include without limitation cylinders, rods, sheets, capsules, tablets, plugs, streamers, tapes, etc.

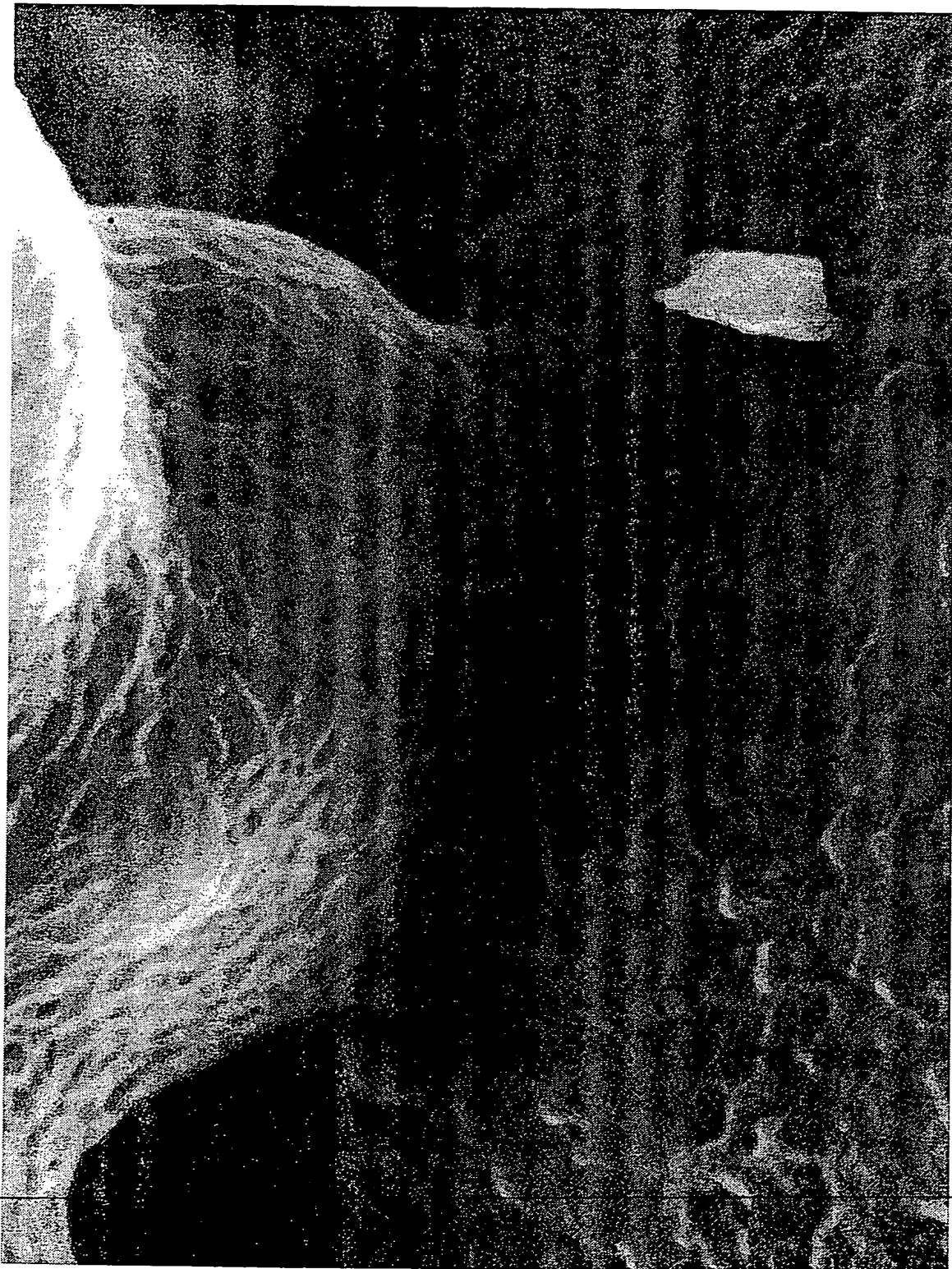
Identifier

This invention allows the incorporation of a unique identifier at the point of manufacture of new sintered physical forms or identification subsequent to manufacture. This includes without limitation indicia which uniquely characterise each reaction zone. The indicia may comprise, for example, numbers, letters, symbols or colours in a coded combination. The indicia may be applied to the respective reaction zones before synthesis commences using known printing methods. These are preferably such that the ink used will not leach out of the reaction zones during the synthetic procedures, or otherwise interfere with formation and subsequent removal of a compound held on a particular reaction zone. UV sensitive ink which is "fixed" to the reaction zones by exposure to ultraviolet radiation after printing is generally suitable for this purpose. Other types of indicia, not necessarily optical in nature, may be used for identifying individual reaction zones. Possible alternatives include Smiles strings, bar-codes, chemical structures, marked or printed punched card formats, ultraviolet-readable fluorescent systems and electro-magnetically readable devices such as magnetic strips and RF ID, snowflakes dot matrix reading and other analogous systems. The type of indicia used may depend on the size and shape of the support material and/or reaction zones.

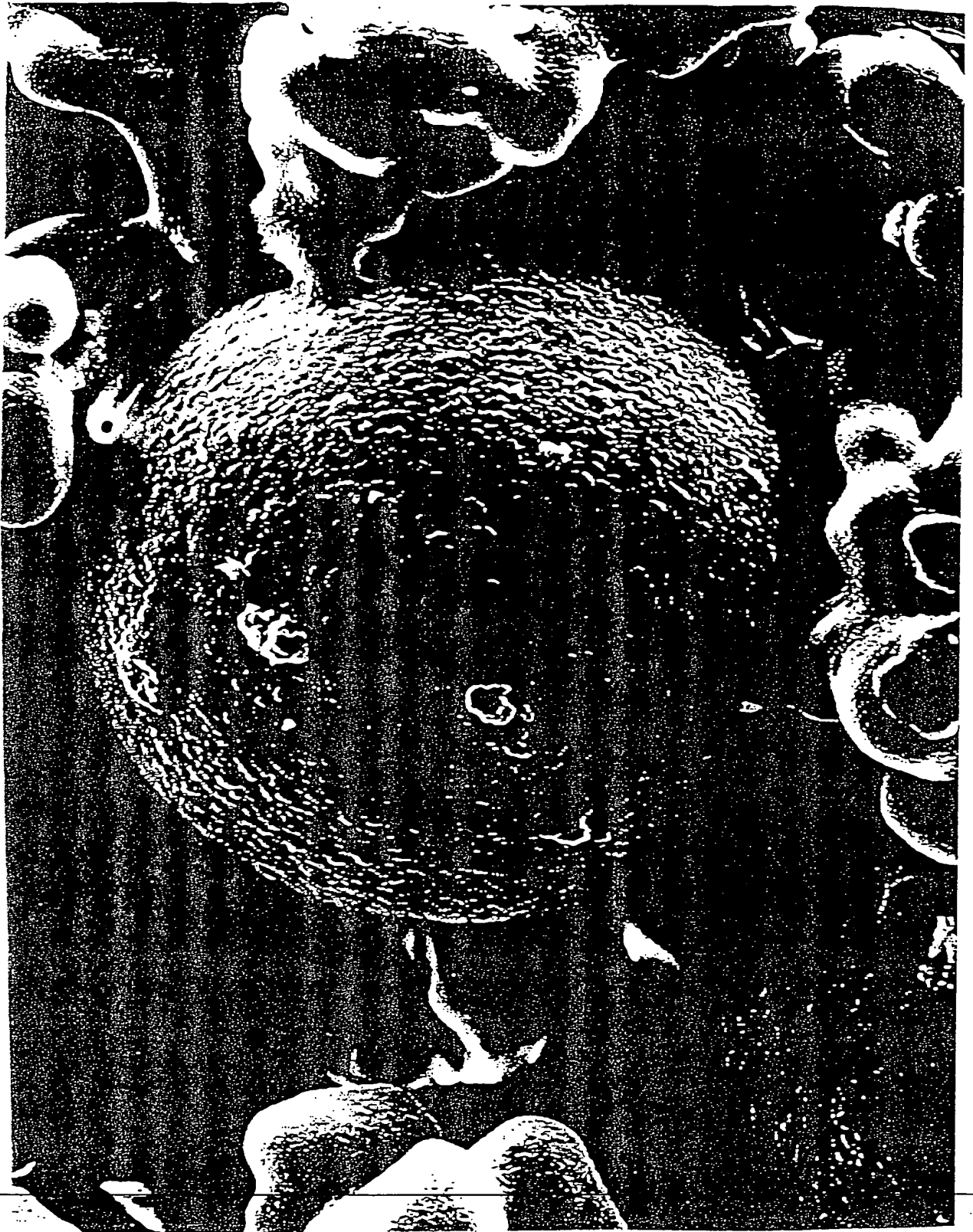
Additional Principles

The principle exists that one or more layers of reagent containing matrices may be simultaneously or subsequently formed or reformed to provide a material containing 2 or more reagent matrices within the same physical format thereby allowing 2 or more reactions to proceed concurrently or sequentially within the same matrix.

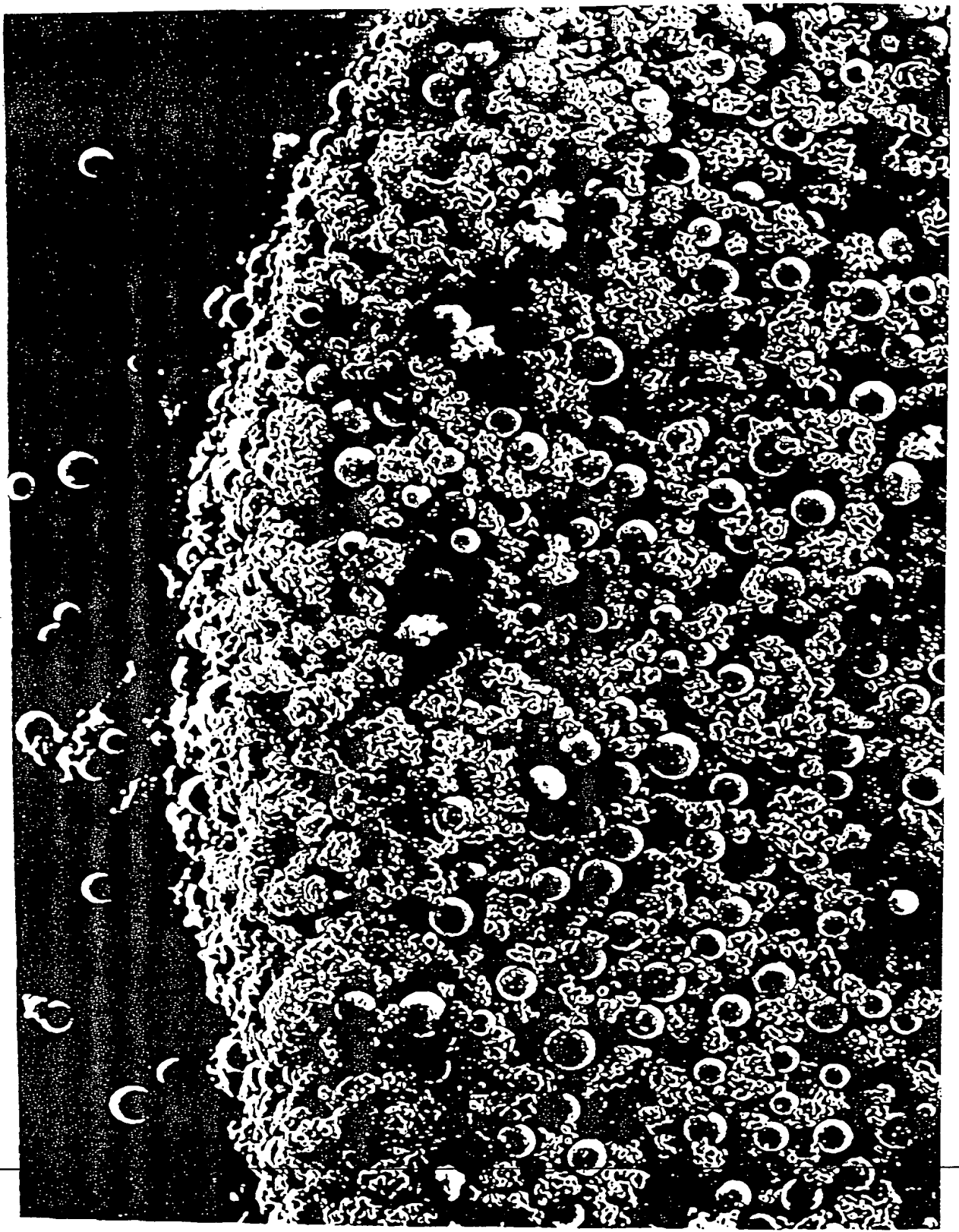
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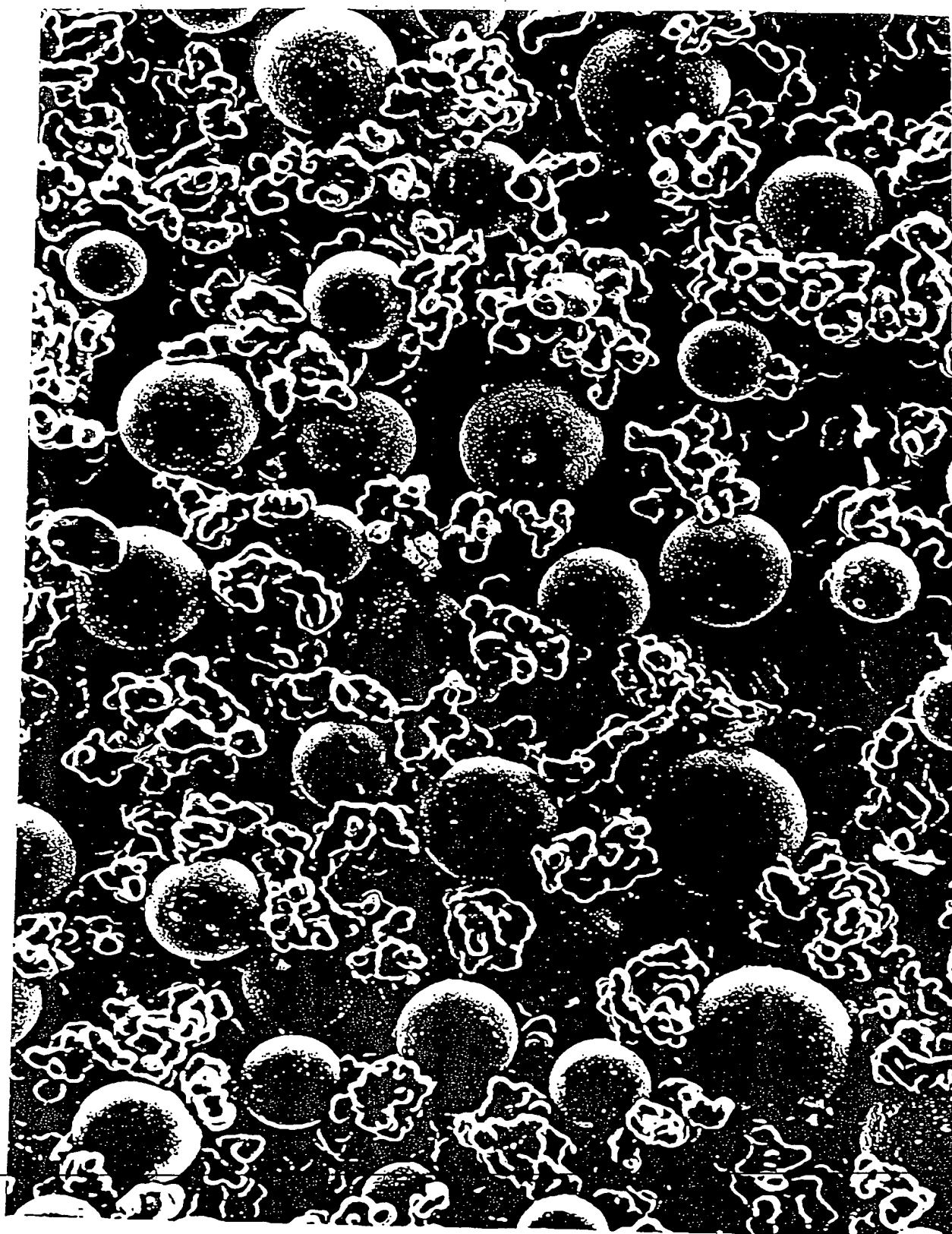
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